

# Claims

- [c1] 1.A device, comprising:  
a first section of pipe comprised of at least one length of pipe;  
a threaded pin connector coupled to said first section of pipe;  
a second section of pipe comprised of at least one length of pipe; and  
a threaded box connector coupled to said second section of pipe, said box and pin connectors being threadingly coupled to one another and welded to one another along an exterior grooved circumferential weld joint.
- [c2] 2.The device of claim 1, wherein said first section of pipe is comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one another.
- [c3] 3.The device of claim 1, wherein said second section of pipe is comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one another.
- [c4] 4.The device of claim 1, wherein said threaded box and pin connectors comprise wedged dovetail threads with a

continuously varying flank-to-flank width.

- [c5] 5.The device of claim 1, wherein said threaded pin connector is butt-welded to said first section of pipe.
- [c6] 6.The device of claim 1, wherein said threaded box connector is butt-welded to said second section of pipe.
- [c7] 7.The device of claim 1, further comprising a sealing interface between an exterior sealing surface of said pin connector and an interior sealing surface of said box connector.
- [c8] 8.The device of claim 7, wherein said sealing interface is established by providing an interference fit between said exterior sealing surface of said pin connector and said interior sealing surface of said box connector.
- [c9] 9.The device of claim 1, wherein said grooved circumferential weld joint extends around the entire circumference of said pin and box connectors.
- [c10] 10.The device of claim 1, wherein said grooved circumferential weld joint has a depth that is less than a thickness of said at least one length of pipe of said first section of pipe.
- [c11] 11.The device of claim 1, wherein said grooved circumferential weld joint has a depth that is approximately

20–30 percent of a thickness of said at least one length of pipe of said first section of pipe.

[c12] 12.The device of claim 1, wherein said grooved circumferential weld joint is a J-groove weld joint.

[c13] 13.The device of claim 1, wherein said grooved circumferential weld joint is defined by an end surface of said box connector and a surface of said pin connector.

[c14] 14.The device of claim 1, wherein said grooved circumferential weld joint is defined by an end surface of said box connector and a side surface of a shoulder on said pin connector.

[c15] 15.The device of claim 1, wherein said grooved circumferential weld joint is defined by an end surface of said box connector and a side surface of a shoulder on said pin connector, wherein a diameter of an outer surface of said shoulder and a diameter of an outer surface of said box connector at said grooved circumferential weld joint are approximately the same.

[c16] 16.The device of claim 1, wherein said grooved circumferential weld joint is filled with a single weld pass.

[c17] 17.The device of claim 1, wherein said grooved circumferential weld joint is filled using a submerged arc weld–

ing process.

[c18] 18.The device of claim 1, further comprising a recessed attachment area on each of said pin and box connectors.

[c19] 19.A device, comprising:  
a first section of pipe comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one another;  
a threaded pin connector coupled to said first section of pipe;  
a second section of pipe comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one another; and  
a threaded box connector coupled to said second section of pipe, said box and pin connectors being threadingly coupled to one another and welded to one another along an exterior grooved circumferential weld joint, wherein a sealing interface exists between an exterior sealing surface of said pin connector and an interior sealing surface of said box connector.

[c20] 20.The device of claim 19, wherein said threaded box and pin connectors comprise wedged dovetail threads with a continuously varying flank-to-flank width.

[c21] 21.The device of claim 19, wherein said threaded pin

connector is butt-welded to said first section of pipe.

[c22] 22.The device of claim 19, wherein said threaded box connector is butt-welded to said second section of pipe.

[c23] 23.The device of claim 19, wherein said sealing interface is established by providing an interference fit between said exterior sealing surface of said pin connector and said interior sealing surface of said box connector.

[c24] 24.The device of claim 19, wherein said grooved circumferential weld joint extends around the entire circumference of said pin and box connectors.

[c25] 25.The device of claim 19, wherein said grooved circumferential weld joint has a depth that is less than a thickness of one of said plurality of lengths of pipe of said first section of pipe.

[c26] 26.The device of claim 19, wherein said grooved circumferential weld joint has a depth that is approximately 20–30 percent of a thickness of one of said at plurality of lengths of pipe of said first section of pipe.

[c27] 27.The device of claim 19, wherein said grooved circumferential weld joint is a J-groove weld joint.

[c28] 28.The device of claim 19, wherein said grooved circumferential weld joint is defined by an end surface of said

box connector and a surface of said pin connector.

[c29] 29.The device of claim 19, wherein said grooved circumferential weld joint is defined by an end surface of said box connector and a side surface of a shoulder on said pin connector.

[c30] 30.The device of claim 19, wherein said grooved circumferential weld joint is defined by an end surface of said box connector and a side surface of a shoulder on said pin connector, wherein a diameter of an outer surface of said shoulder and a diameter of an outer surface of said box connector at said grooved circumferential weld joint are approximately the same.

[c31] 31.The device of claim 19, wherein said grooved circumferential weld joint is filled with a single weld pass.

[c32] 32.The device of claim 19, wherein said grooved circumferential weld joint is filled using a submerged arc welding process.

[c33] 33.The device of claim 19, further comprising a recessed attachment area on each of said pin and box connectors.

[c34] 34.A device, comprising:  
a first section of pipe comprised of at least one length of pipe;

a threaded box connector coupled to a first end of said first section of pipe; and  
a threaded pin connector coupled to a second end of said first section of pipe, wherein an end surface on said pin connector is adapted to define a portion of an external grooved circumferential weld joint between said pin connector and a mating box connector on a second section of pipe comprised of at least one length of pipe when said pin connector and said mating box connector on said second section of pipe are threadingly coupled to one another.

[c35] 35.The device of claim 34, further comprising an exterior sealing surface on said pin connector that is adapted to engage an interior sealing surface on said mating box connector when said pin connector and said mating box connector are threadingly coupled to one another.

[c36] 36.The device of claim 35, wherein a sealing interface is established by providing an interference fit between said exterior sealing surface on said pin connector and said interior sealing surface on said mating box connector on said second section of pipe.

[c37] 37.The device of claim 34, wherein said first section of pipe is comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one

another.

[c38] 38.The device of claim 34, wherein said second section of pipe is comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one another.

[c39] 39.The device of claim 34, wherein said threaded box and pin connectors coupled to said first section of pipe comprise wedged dovetail threads with a continuously varying flank-to-flank width.

[c40] 40.The device of claim 34, wherein said threaded pin connector is butt-welded to said first section of pipe.

[c41] 41.The device of claim 34, wherein said threaded box connector is butt-welded to said first section of pipe.

[c42] 42.The device of claim 34, wherein said grooved circumferential weld joint extends around the entire circumference of said pin connector and said mated box connector on said second section of pipe.

[c43] 43.The device of claim 34, wherein said grooved circumferential weld joint has a depth that is less than a thickness of said at least one length of pipe of said first section of pipe.

[c44] 44.The device of claim 34, wherein said grooved circum-



ferential weld joint has a depth that is approximately 20–30 percent of a thickness of said at least one length of pipe of said first section of pipe.

[c45] 45.The device of claim 34, wherein said grooved circumferential weld joint is a J-groove weld joint.

[c46] 46.The device of claim 34, wherein said grooved circumferential weld joint is adapted to be further defined by a side surface of a shoulder on said mating box connector.

[c47] 47.The device of claim 34, wherein said circumferential weld joint is adapted to be filled with a single weld pass.

[c48] 48.The device of claim 34, wherein said grooved circumferential weld joint is adapted to be filled using a submerged arc welding process.

[c49] 49.The device of claim 34, further comprising a recessed attachment area on each of said pin and box connectors.

[c50] 50.A device, comprising:  
a first section of pipe comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one another;  
a threaded box connector coupled to a first end of said first section of pipe; and  
a threaded pin connector coupled to a second end of

said first section of pipe, said threaded pin connector having an exterior sealing surface and an end surface on said pin connector that is adapted to define a portion of an external grooved circumferential weld joint between said pin connector and a mating box connector on a second section of pipe comprised of at least one length of pipe when said pin connector and said mating box connector on said second section of pipe are threadingly coupled to one another, said mating box connector further comprising an internal sealing surface that is adapted to sealingly engage said exterior sealing surface on said pin connector when said pin connector and said mating box connector are threadingly coupled to one another.

[c51] 51.The device of claim 50, wherein a sealing interface is established by providing an interference fit between said exterior sealing surface of said pin connector and said interior sealing surface of said mating box connector on said second section of pipe.

[c52] 52.The device of claim 50, wherein said second section of pipe is comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one another.

[c53] 53.The device of claim 50, wherein said threaded box

and pin connectors on said first section of pipe comprise wedged dovetail threads with a continuously varying flank-to-flank width.

[c54] 54.The device of claim 50, wherein said threaded pin connector is butt-welded to said first section of pipe.

[c55] 55.The device of claim 50, wherein said threaded box connector is butt-welded to said first section of pipe.

[c56] 56.The device of claim 50, wherein said grooved circumferential weld joint extends around the entire circumference of said pin connector and said mated box connector on said second section of pipe.

[c57] 57.The device of claim 50, wherein said grooved circumferential weld joint has a depth that is less than a thickness of one of said plurality of lengths of pipe of said first section of pipe.

[c58] 58.The device of claim 50, wherein said grooved circumferential weld joint has a depth that is approximately 20–30 percent of a thickness of one of said plurality of lengths of pipe of said first section of pipe.

[c59] 59.The device of claim 50, wherein said circumferential weld joint is a J-groove weld joint.

[c60] 60.The device of claim 50, wherein said grooved circum-

ferential weld joint is adapted to be further defined by a side surface of a shoulder on said mating box connector.

[c61] 61.The device of claim 50, wherein said grooved circumferential weld joint is adapted to be filled with a single weld pass.

[c62] 62.The device of claim 50, wherein said grooved circumferential weld joint is adapted to be filled using a submerged arc welding process.

[c63] 63.The device of claim 50, further comprising a recessed attachment area on each of said pin and box connectors.

[c64] 64.A method, comprising:  
forming a pipeline, an end of said pipeline having a threaded connector;  
providing a pipe section comprised of at least one length of pipe, said pipe section having threaded connectors on each end of said pipe section;  
threadingly coupling one of said threaded connectors on said pipe section to said threaded connector on said end of said pipeline; and  
welding said threaded connector on said pipe section to said threaded connector on said end of said pipeline along an exterior circumferential weld joint.

[c65] 65.The method of claim 64, wherein said step of thread-

ingly coupling one of said connectors on said pipe section to said threaded connector on said end of said pipeline establishes a sealing interface by providing an interference fit between a sealing surface on said connector on said pipe section and a sealing surface on said connector on said end of said pipeline.

- [c66] 66.The method of claim 64, wherein said pipeline is at least one of a subsea and a surface pipeline.
- [c67] 67.The method of claim 64, wherein said pipeline is a sub-surface pipeline and said pipeline is formed using at least one of an S-lay technique and a J-lay technique.
- [c68] 68.The method of claim 64, wherein said step of threadingly coupling one of said threaded connectors on said pipe section to said threaded connector on said end of said pipeline is accomplished by rotating said pipe section relative to said end of said pipeline.
- [c69] 69.The method of claim 68, wherein said pipe section is rotated by actuating at least one of a top drive and a power tong.
- [c70] 70.The method of claim 64, wherein said step of welding is accomplished by performing a single weld pass to fill said circumferential weld joint.

- [c71] 71.The method of claim 64, wherein said pipe section has a threaded pin connector and said threaded connector on said end of said pipeline is a threaded box connector, said threaded pin connector on said pipe section being adapted to be threadingly coupled to said threaded box connector on said end of said pipeline.
- [c72] 72.The method of claim 64, wherein said pipe section has a threaded box connector and said threaded connector on said end of said pipeline is a threaded pin connector, said threaded box connector on said pipe section being adapted to be threadingly coupled to said threaded pin connector on said end of said pipeline.
- [c73] 73.The method of claim 64, wherein said pipe section is comprised of a plurality of lengths of pipe wherein adjacent lengths of pipe are butt-welded to one another.
- [c74] 74.The method of claim 64, wherein said connectors on said pipe section and on said end of said pipeline comprise wedged dovetail threads with a continuously varying flank-to-flank width.
- [c75] 75.The method of claim 64, wherein said threaded connectors are butt-welded to said pipe section.
- [c76] 76.The method of claim 64, wherein said step of welding creates a circumferential weld joint that extends around

the entire circumference of said threaded connector on said pipe section and said threaded connector on said end of said pipeline.

[c77] 77.The method of claim 76, wherein said circumferential weld joint is a J-groove weld joint.

[c78] 78.The method of claim 64, wherein said circumferential weld joint is a grooved circumferential weld joint.

[c79] 79.The method of claim 76, wherein said step of welding is a single weld pass that substantially fills said circumferential weld joint.

[c80] 80.The method of claim 50, wherein said circumferential weld joint has a depth that is less than a thickness of said at least one length of pipe of said pipe section.

[c81] 81.The method of claim 50, wherein said circumferential weld joint has a depth that is approximately 20–30 percent of a thickness of said at least one length of pipe of said pipe section.